

## NOTES ON THE LIGNEOUS PLANTS DESCRIBED BY H. LEVEILLE FROM EASTERN ASIA<sup>1</sup>

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### ROSACEAE

#### **Rubus** L.

##### Subgen. CYLACTIS (Raf.) Focke

**Rubus fragarioides** Bertol. var. **adenophora** Franchet, Pl. Delavay. 203 (1890).

*Rubus Franchetianus* Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 71 (1909). — Focke in Bibl. Bot. **19** (83): 16 (Spec. Rub. 240) (1914).

There is no specimen of this plant in the Léveillé herbarium. I have seen the type of this variety in the Paris herbarium and have a photograph of it before me; it does not seem to be specifically different from typical *R. fragarioides* Bertol. which is referred by Focke in 1910 (op. cit. **17**: 24) as a variety (or subspecies) to *R. arcticus* L.; in 1914 (l.c.) he enumerates *R. Franchetianus* with the synonym *R. fragarioides* var. *adenophora* Franch., a name not mentioned by him in 1910.

**Rubus pseudo-japonicus** Koidzumi in Bot. Mag. Tokyo, **25**: 74 (1911); in Jour. Coll. Sci. Univ. Tokyo, **34**, 2: 110 (1913).

*Rubus japonicus* (Maxim.) Focke in Abh. Naturw. Ver. Bremen, **4**: 192, 198 (1874); in Bibl. Bot. **17** (72<sup>I</sup>): 26 (Spec. Rub.) (1910). — Non Linné f.

*Rubus triflorus* Rich. var. *diversifolius* Léveillé in Bull. Soc. Agr. Sci. Arts Sarthe, **40**: 58 (1905); in Fedde, Rep. Spec. Nov. **2**: 174 (1906); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 122 (1909).

*Rubus pseudo-japonicus* var. *diversifolius* (Lévl.) Koidzumi in Jour. Coll. Sci. Tokyo **34**, 2: 110 (1913). — Makino & Nemoto, Nippon-shokubutsu-shûen, ed. 2, p. 522 (1931).

JAPAN. H o k k a i d o : in silvis Hakodate, *U. Faurie*, no. 6070, June 1, 1904 (holotype of *R. triflorus* var. *diversifolius*; isotype in A. A.).

Léveillé describes his variety as having simple and compound leaves

<sup>1</sup>Continued from Vol. **17**: 316-340; for preceding parts see Vols. **10**: 108-132, 164-196; **12**: 275-281; **13**: 299-332; **14**: 223-252; **15**: 1-27, 89-117, 267-326; **16**: 311-340; **17**: 53-82.



on the same stem, but the type specimen, which, however, does not bear Léveillé's name, has all the leaves either ternate or quinate. In 1909 Léveillé reprints under *R. triflorus* Rich. the description given by Thunberg (Fl. Jap. 216. 1784) for his *R. caesius* (non L.), but that description applies apparently to a species of the Subgen. *Idaeobatus*.

**Rubus ikenoensis** Léveillé & Vaniot in Bull. Soc. Bot. France, **53**: 549 (1906). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 130 (1909). — Koidzumi in Jour. Coll. Sci. Tokyo, **34**, 2: 109 (1931). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 165 (Spec. Rub.) (1911).

*Rubus defensus* Focke in Bibl. Bot. **17** (72<sup>II</sup>): 26 (Spec. Rub.) (1910). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 273 (1917).

JAPAN. H o n d o : in sylvis Norikusa, 2000 m., *U. Faurie*, no. 6687, Aug. 28, 1905 (holotype of *R. ikenoensis*; photo. in A. A.).

Focke himself in 1911 identified his *R. defensus* with *R. ikenoensis*. From the preceding it differs chiefly in the setose stems and petioles and the deeply incised doubly serrate leaflets.

#### Subgen. MALACHOBATUS Focke

##### Sect. *Sozostyli* Focke

**Rubus refractus** Léveillé in Fedde, Rep. Spec. Nov. **4**: 332 (1907); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 54 (1909); Fl. Kouy-Tchéou, 359 (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 62 (Spec. Rub.) (1910); **19** (83): 22, fig. 3 (Spec. Rub. 246, fig. 90) (1914). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 278 (1917).

CHINA. K w e i c h o u : Chang-ieoumay, *J. Esquirol*, no. 356, April 1, 1905, "fleur blanche, le tout renversé en bas" (holotype; photo. in A. A.).

Cardot (l.c.) points out that this species differs from the other species of the *Sozostyli* in the bracts and stipules being divided into filiform lobes and that in this respect it approaches the *Alceaefolii*; he proposes its separation as a new section "*Refracti*." This section would include the following species. He also described a new variety *R. refractus* var. *latifolius* (see under *R. alceaefolius*, p. 33).

**Rubus Rocheri** Léveillé in Bull. Acad. Intern. Géog. Bot. **24**: 250 (1914); Fl. Kouy-Tchéou, 360 (1915); Cat. Pl. Yun-Nan, 240, fig. 60 (1917).

CHINA. K w e i c h o u : Ta-pin, 1200 m., *J. Esquirol*, no. 3526, March 25, 1912 (holotype; photo. in A. A.).

This species is very close to the preceding, but is easily distinguished by the dense fulvous tomentum of the stem, the rhachis and pedicels of



the inflorescence and of the underside of the leaves which are smaller, not or scarcely lobed, more sharply and closely serrate, appressed-pilose above and deeply cordate.

**Rubus malifolius** Focke in Hooker's Ic. Pl. **20**: t. 1947 (1890); in Bibl. Bot. **17** (72<sup>1</sup>): 42 (Spec. Rub.) (1910). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 275 (1917).

*Rubus arbor* Léveillé & Vaniot in Bull. Soc. Bot. France, **51**: 217, pl. 3 (1904). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 26 (1909); Fl. Kouy-Tchéou, 357 (1915).

CHINA. K w e i c h o u : Pin-fa, route de Siao-tchang, *J. Cavalerie*, no. 1003, May 7, 1903, "arbre, fl. blanches" (holotype of *R. arbor*; photo. in A. A.).

According to the collector's note this is a tree. However, in reality it is only a tall climber and Handel-Mazzetti (Symb. Sin. **7**: 486) calls it perhaps the tallest *Rubus* climbing on trees up to a height of 20 m.

**Rubus Mairei** Léveillé in Bull. Acad. Intern. Géog. Bot. **22**: 232 (1912); Cat. Pl. Yun-Nan, 239 (1917).

CHINA. Y u n n a n : Tong-tchouan, broussailles, 2700 m., rare, *E. E. Maire*, (Herb. Bonati, no. 7491), Aug. 1910, "un peu grimpant, fl. blanches" (holotype in Herb. Léveillé; isotype in Herb. Calif.; photo. in A. A.).

This species is closely related to *R. preptanthus* Focke, but is easily distinguished by the narrow-lanceolate leaves only 1–1.5 cm. broad, more remotely and finely serrate, by the shorter petioles 3–5 mm. long and the more copiously armed branches. Handel-Mazzetti (Symb. Sin. **7**: 486. 1933) refers *R. Mairei* to *R. Henryi* Hemsl. & Ktze.; but from that species it differs in the deciduous, thinner always undivided leaves, in the much shorter petioles and the short, almost corymbose often few-flowered racemes with pedicels 1–1.5 cm. long.

#### Sect. *Elongati* Focke

**Rubus chroosepalus** Focke in Hooker's Ic. Pl. **10**: t. 1952 (1891); in Bibl. Bot. **17** (72<sup>1</sup>): 52, fig. 15 (Spec. Rub.) (1910); in Sargent Pl. Wilson. **1**: 49 (1911). — Léveillé, Fl. Kouy-Tchéou, 360 (1915); Cat. Pl. Yun-Nan, 236 (1917). — Handel-Mazzetti, Symb. Sin. **7**: 491 (1933).

*Rubus Mouyousensis* Léveillé in Fedde, Rep. Spec. Nov. **4**: 333 (1907); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 44 (1909); Fl. Kouy-Tchéou, 359 (1915). — Focke in Bibl. Bot. **17** (72<sup>1</sup>): 62 (Spec. Rub.) (1910).

*Rubus petaloides* Léveillé in Fedde, Rep. Spec. Nov. **12**: 506 (1913).



CHINA. K w e i c h o u : Mou-you-se, *J. Cavalerie*, no. 1416, June 1904 (holotype of *R. Mouyousensis*; photo. in A. A.); Chouan-chang-po, à la sortie du bourg, *J. Esquirol*, no. 3141, May 1911 (holotype of *R. petaloideus*; photo. in A. A.).

*Rubus Mouyousensis* was identified with *R. chroosepalus* by Handel-Mazzetti (l.c.) and *R. petaloideus* was enumerated as a synonym of *R. chroosepalus* by Lévillé in 1915 (l.c.) and 1917 (l.c.).

**Rubus Gentilianus** Lévillé & Vaniot in Bull. Acad. Intern. Géog. Bot. **11**: 99 (1902); **12** (no. 60): t. 3 (1903); **20** (Mém.): 35 (1909); Fl. Kouy-Tchéou, 358 (1915); in Bull. Soc. Agr. Sci. Arts Sarthe, **45**: 219, fig. 3 (Pl. Util. Orn. Kouy-Tchéou, 45, fig. 3) (1915); Cat. Pl. Yun-Nan, 239 (1917); Cat. Ill. Pl. Seu-Tchouen, pl. 60 (1918). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 53 (Spec. Rub.) (1910); **19** (83): 26, fig. 5 (Spec. Rub. 250) (1914); in Sargent, Pl. Wilson. **1**: 50 (1911). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 279 (1917). — Handel-Mazzetti, Symb. Sin. **7**: 491 (1933). — Merrill in Lingnan Sci. Jour. **13**: 28 (1934).

CHINA. K w e i c h o u : environs de Tsin-gay, rocailles, *E. Bodinier*, no. 2367, June 27, 1899; environs de Kouy-yang, mont du Collège, rocailles, ruisseaux, *E. Bodinier*, no. 2367, June 16, 1898 (syntypes; photos. in A. A.).

This species has been collected in Kweichou also by Handel-Mazzetti (no. 10419) and by Steward, Chiao & Cheo (no. 57). It is also known from Szechuan (E. H. Wilson, no. 1127, and W. P. Fang, no. 2537) and from Kwangtung (W. T. Tsang, no. 20611).

**Rubus ichangensis** Hemsley & Kuntze in Jour. Linn. Soc. Bot. **23**: 231 (1887). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 55, fig. 18 (Spec. Rub.) (1910); **19** (83): 26 (Spec. Rub. 250) (1914); in Sargent, Pl. Wilson. **1**: 50 (1911). — Lévillé, Fl. Kouy-Tchéou, 360 (1915). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 279 (1917).

*Rubus Papyrus* Lévillé in Fedde, Rep. Spec. Nov. **4**: 332 (1907); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 30 (1909). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 56 (Spec. Rub.) (1910).

CHINA. K w e i c h o u : Pin-fa, montagnes, *J. Cavalerie*, no. 1439, Oct. 27, 1903 (holotype of *R. Papyrus*; photo. in A. A.).

*Rubus Papyrus* was first identified with *R. ichangensis* by Focke in 1914 (l.c.). The species is represented in this herbarium from Kweichou, also by no. 10647 of Handel-Mazzetti and by nos. 5587, 5733, 7504 and 9230 of Y. Tsiang and by numerous specimens from Szechuan and some from Hupeh.



## Sect. Acuminati Focke

**Rubus Lambertianus** Ser. var. **minimiflorus** (Lévl.) Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 281 (1917). — Handel-Mazzetti, Symb. Sin. **7**: 489 (1933).

*Rubus minimiflorus* Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 32 (1909); Fl. Kouy-Tchéou, 359 (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 56 (Spec. Rub.) (1910); **19** (83): 28 (Spec. Rub. 252) (1914).

CHINA. K w e i c h o u : Pin-fa, montagnes, *J. Cavalerie*, no. 1775, Apr. 17, 1904 (holotype of *R. minimiflorus*; photo. in A. A.).

Focke in 1914 (l.c.) refers to the possible identity of his *R. pycnanthus* with *R. minimiflorus*, but the description of the former differs in several characters from the type of the latter.

**Rubus paykouangensis** Léveillé in Fedde, Rep. Spec. Nov. **4**: 333 (1907); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 19 (1909); Fl. Kouy-Tchéou, 359 (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 110 (Spec. Rub.) (1910). — Metcalf in Lingnan Sci. Jour. **11**: 7 (1932), pro parte specim. plurim. cit. exclud. — Merrill in Lingnan Sci. Jour. **15**: 420 (1936), specim. cit. excl.

*Rubus Lambertianus* Ser. var. *paykouangensis* (Lévl.) Handel-Mazzetti, Symb. Sin. **7**: 489 (1933).

CHINA. K w e i c h o u : Pay-kouang, *J. Esquirol*, no. 221, Sept. 1904, "fl. blanches" (holotype; photo. in A. A.).

This species was reduced by Handel-Mazzetti to a variety of *R. Lambertianus*, to which it certainly is more closely related than to the Ser. Rufi where Focke placed the species. From *R. Lambertianus* it is easily distinguished by the inflorescence, the stems and petioles being densely covered with pilose and setose partly gland-tipped hairs and by the larger flowers with broader sepals. Metcalf (l.c.) refers to this species a number of specimens from Fukien, Kiangsi and Yunnan which though similar in their indumentum differ markedly in the short often sub-umbellate inflorescence, in the pinnate sepals, in the broader and larger generally orbicular-ovate leaves densely pubescent or even tomentose beneath and in the unarmed branches; they are apparently referable to the Sect. Moluccani. Also W. T. Tang, no. 20791, from Kwangtung cited by Merrill (l.c.) under *R. paykouangensis* belongs to that section.

## Sect. Moluccani Focke

**Rubus tephrodes** Hance var. **ampliflorus** (Lévl. & Vant.) Handel-Mazzetti, Symb. Sin. **7**: 492 (1933).

*Rubus ampliflorus* Léveillé & Vaniot in Bull. Soc. Bot. France, **51**: 218



(1904). — Lévêillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 52 (1909); Fl. Kouy-Tchéou, 357 (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 74 (Spec. Rub.) (1910); **19** (83): 28, fig. 6 (Spec. Rub. 252, fig. 93) (1914).

CHINA. K w e i c h o u : Tsin-gai, Tchao-se, *J. Cavalerie*, no. 1201, July 1903, "fl. blanches" (holotype; photo. in A. A.).

Variety *ampliflorus* differs from typical *R. tephrodes* chiefly in the sparingly setose eglandular branches and the very sparingly setose and very large inflorescence about 25 cm. long and 30 cm. wide. Cardot in 1914 (in Not. Syst. Paris, **3**: 294) mentions *R. ampliflorus* as being closely related to his new species *R. megalothyrsus* which by Handel-Mazzetti (l.c.) is also referred to *R. tephrodes* as a variety.

**Rubus holadenus** Lévêillé in Fedde, Rep. Spec. Nov. **12**: 536 (1913); Fl. Kouy-Tchéou, 358 (1915).

CHINA. K w e i c h o u : Gan-chouen, alt. 1500 m., *J. Cavalerie*, no. 3948 (holotype; photo. in A. A.).

This species seems to be nearest to *R. tephrodes* Focke, but is readily distinguished by the aciculate calyx, the dark red-brown glabrescent stem and the triangular-ovate, lobulate and acuminate middle lobe of the leaves which are dark-colored above and with dark-colored glabrescent veins beneath.

**Rubus calycacanthus** Lévêillé in Fedde, Rep. Spec. Nov. **8**: 58 (1910); Fl. Kouy-Tchéou, 357 (1915). — Focke in Bibl. Bot. **19** (83): 34 (Spec. Rub. 258) (1914) sub *R. Labbei*. — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 282 (1917). — Handel-Mazzetti, Symb. Sin. **7**: 494 (1933).

*Rubus calycacanthus* var. *Buergerifolia* Lévêillé in Fedde, Rep. Spec. Nov. **8**: 58 (1910).

*Rubus Labbei* Lévêillé & Vaniot in Fedde, Rep. Spec. Nov. **8**: 549 (1910). — Lévêillé, Fl. Kouy-Tchéou, 359 (1915). — Focke in Bibl. Bot. **19** (83): 34 (Spec. Rub. 258) (1914).

*Rubus Darrisii* Lévêillé in Fedde, Rep. Spec. Nov. **12**: 188 (1913); Fl. Kouy-Tchéou, 258 (1915). — Focke in Bibl. Bot. **19** (83): 48 (Spec. Rub. 272) (1914). — **Synon. nov.**

CHINA. K w e i c h o u : Tchen-fong, *J. Esquirol*, no. 525, July 1905, "fl. blanche"; without locality, *J. Esquirol*, no. 894 (syntypes of *R. calycacanthus*; photos. in A. A.); without locality, *J. Esquirol*, no. 920; Houa-kiang, *J. Cavalerie*, no. 2175, June 3, 1904 (syntypes of *R. calycacanthus* var. *Buergerifolia*; photos. in A. A.); Lo-fou, *J. Cavalerie*, no. 3575, Aug. 1909, "fl. blanche" (holotype of *R. Labbei*; photo. in A. A.); without locality, *J. Esquirol*, no. 920 (holotype of *R. Darrisii*, photo. in A. A.).



The type specimens of *R. calycacanthus* var. *Buergerifolia* were enumerated by Lévêillé in 1915 under the species without citation of the varietal name. *Rubus Labbei* was first identified with *R. calycacanthus* by Cardot in 1917. All the specimens cited above including *R. Darrisii* are undoubtedly conspecific and uniform in their characters. The species is characterized by the short-stalked flowers crowded in short racemes or clusters, subtended by conspicuous bracts finely divided into long subulate segments, the acicular calyx, and the palmately 5-lobed leaves with the middle lobe often somewhat elongated but not acuminate, densely soft pubescent beneath and less so above, petioles and stem tomentose with small scattered hooked prickles.

***Rubus alceaefolius*** Poiret, Encycl. Méth. Bot. 6: 247 (1804) "*alcae-folius*." — Focke in Bibl. Bot. 17 (72<sup>1</sup>): 78, fig. 29 (1910).

*Rubus Mongouilloni* Lévêillé & Vaniot in Bull. Acad. Intern. Géog. Bot. 11: 101 (1902); 12 (no. 160): t. 6. (1903); 20 (Mém.): 56 (1909); Fl. Kouy-Tchéou, 359 (1915); in Bull. Soc. Agr. Sci. Arts Sarthe, 45: 219, fig. 6 (Pl. Util. Orn. Kouy-Tchéou, 45, fig. 6) (1915). — Focke in Bibl. Bot. 17 (72<sup>1</sup>): 106 (Spec. Rub.) (1910); 19 (83): 30 (Spec. Rub. 254) (1914). — **Synon. nov.**

*Rubus fimbriiferus* Focke in Bibl. Bot. 17 (72<sup>1</sup>): 80 (Spec. Rub.) (1910); 19 (83): 29 (Spec. Rub. 253) (1914). — Cardot in Bull. Mus. Hist. Nat. Paris, 23: 282 (1917); Handel-Mazzetti, Symb. Sin. 7: 494 (1933). — **Synon. nov.**

*Rubus multibracteatus* var. *Demangei* Lévêillé in Fedde, Rep. Spec. Nov. 11: 548 (1913). — **Synon. nov.**

CHINA. K w e i c h o u : sur la route de Huang-kien, Tou-chan, Ou-pao, *J. Cavalerie*, sine no., July 5, 1897 (holotype of *R. Mongouilloni*; photo. in A. A.); Pin-fa, Leao-me-lo, au sud, *J. Cavalerie*, no. 1369, Aug. 1907 (cited under *R. Mongouilloni* in Fl. Kouy-Tchéou; photo. in A. A.).

INDOCHINA. T o n k i n : Hanoi, *V. Demange*, no. 1019, March 25, 1908 (holotype of *R. multibracteatus* var. *Demangei*; photo. in A. A.).

With specimens of *Rubus alceaefolius* from Sumatra, Borneo and Java, the type region of the species, and specimens of *R. fimbriiferus* from southeastern China and Indochina, the type region of that species, and the type specimen and other specimens referred to *R. Mongouilloni* before me, I am unable to find a single constant character or combination of characters to separate these three species. Also Cardot under *R. fimbriiferus* (l.c.) refers to the close affinity of that species to *R. alceaefolius*; he mentions as a distinguishing character the bulbous hairs on the upper surface of the leaf in *R. fimbriiferus*, but there are scattered bulbous hairs on specimens from Sumatra and Borneo and the leaves of the Javanese specimen are as rough and hairy above as those of typical



*R. fimbriiferus*; among the Chinese material there are specimens, as Chung & Tso 43642 and Tsang 15725 from Hainan, with the leaves nearly smooth above and only slightly pilose. Though the lobes of the leaves in *R. fimbriiferus* are typically rounded, the numerous Chinese specimens show all gradations between rounded and pointed lobes and even the specimen of *R. alceaefolius* figured by Focke (l.c.) has the lobes, at least of the lower leaves, nearly rounded. *Rubus Mongouilloni* and *R. fimbriiferus* were first considered conspecific by Handel-Mazzetti (l.c.) who does not mention *R. alceaefolius* at all, and refers *R. Mongouilloni* as a synonym to *R. fimbriiferus*, though *R. Mongouilloni* has priority. He also states (l.c.) that he is inclined to refer to *R. fimbriiferus* the *R. refractus* Lévl. var. *latifolius* Cardot (in Not. Syst. Paris, 3: 291. 1917) of which he saw at Kew a specimen of the type number, Cavalerie no. 3574, from Kweichou.

*Rubus multibracteatus* var. *Demangei* is not mentioned by Cardot in his treatment of the genus in Lecomte, Fl. Gén. Indochine, 2: 629–650 (1920), but it is probable that he saw a specimen of Demange no. 1019 and referred it to *R. alceaefolius*, since he states that this species is represented by specimens from numerous localities in Tonkin and Assam.

***Rubus multibracteatus*** Léveillé & Vaniot in Bull. Acad. Intern. Géog. Bot. 11: 99 (1902); 12 (no. 160): t. 5 (1903); 20 (Mém.): 57 (1909); Fl. Kouy-Tchéou, 359 (1915); in Bull. Soc. Agr. Sci. Arts Sarthe, 45: 219, fig. 6 (Pl. Util. Orn. Kouy-Tchéou, 45, fig. 6) (1915). — Focke in Bibl. Bot. 17 (72<sup>I</sup>): 103 (Spec. Rub.) (1910). — Cardot in Bull. Mus. Hist. Nat. Paris, 23: 285 (1917), sub *R. mallodes*. — Handel-Mazzetti, Symb. Sin. 7: 496 (1933).

*Rubus andropogon* Léveillé in Fedde, Rep. Spec. Nov. 8: 58 (Feb. (1910)).

*Rubus clinocephalus* Focke in Bibl. Bot. 17 (72<sup>I</sup>): 102, fig. 44 (Spec. Rub.) (1910); 19 (83): 31 (Spec. Rub. 255) (1914). — Léveillé, Fl. Kouy-Tchéou, 357 (1915); Cat. Pl. Yun-Nan, 236 (1917). — Cardot in Bull. Mus. Hist. Nat. Paris, 23: 285 (1917).

*Rubus mallodes* Focke in Bibl. Bot. 17 (72<sup>I</sup>): 104, fig. 45 (1910); 19 (83): 34 (Spec. Rub. 258) (1914). — Cardot in Bull. Mus. Hist. Nat. Paris, 23: 285 (1917).

CHINA. K w e i c h o u : environs de Mou-you-se, E. Bodinier, no. 494, July 17, 1900, "fl. blanches" (holotype of *R. multibracteatus*; photo. in A. A.); montagnes, J. Esquirol, June 1909 (holotype of *R. andropogon*; photo. in A. A.). Y u n n a n : Mengtze mountains, 6000 ft., A. Henry, no. 10293 (erroneously cited by Focke as 10239) "large climber, red fruits, white flowers" (holotype of *R. clinocephalus*; isotype in A. A.).



S z e c h u a n : Min river banks, *E. H. Wilson*, Veitch Exp. no. 3479, June 1903 (holotype of *R. mallodes*; isotype in A. A.).

With the types of *R. multibracteatus* and *R. andropogon* and isotypes of *R. clinocephalus* and *R. mallodes* before me I have no doubt that all four are conspecific. Focke had placed his *R. mallodes* together with *R. multibracteatus* in his series Pacati differing from series Rugosi in the truncate middle lobe of the leaf, but the leaves on the specimens show intergradations between truncate and acute apices and these two species should be referred to the Rugosi, if the two series are maintained at all. *Rubus andropogon* was referred by Focke to *R. clinocephalus* already in 1914 (l.c.), and was enumerated by Lévêillé under that species in 1915 (l.c.). *Rubus mallodes* was retained by Cardot in 1917 (l.c.) but in his discussion under that species he states that apparently *R. mallodes* is a synonym of *R. multibracteatus*, and in the same place he recommends the union of the series Rugosi and Pacati. *Rubus clinocephalus* maintained by Cardot as a distinct species was referred as a synonym to *R. multibracteatus* by Handel-Mazzetti in 1933 (l.c.).

**Rubus Esquirolii** Lévêillé in Fedde, Rep. Spec. Nov. **4**: 333 (1907); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 21 (1909); Fl. Kouy-Tchéou, 358 (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 87 (Spec. Rub.) (1910); **19** (83): 30, 35 (Spec. Rub. 254, 259) (1914).

CHINA. K w e i c h o u : Pin-fa, Niang-ouang, bois humides, *J. Cavalerie*, no. 2351 (holotype; photo. in A. A.).

This species which is represented only by a sterile branch seems to be related to *R. reflexus* Ker, as indicated by Lévêillé. It appears closest to var. *Hui* (Diels apud Hu) Metc., but differs in the narrower leaves, ovate in outline with a triangular-ovate gradually acuminate middle lobe, several times longer than the short lateral lobes, in the sharp and close serration, each tooth with a tuft of hairs at the apex, in the longer pilose pubescence of the stem and petioles, and on the veins of the under side of the leaves, and in the more finely and deeply divided bracts.

**Rubus setchuenensis** Bureau & Franchet in Jour. de Bot. **5**: 46 (1891). — Focke in Bibl. Bot. **19** (83): 32 (Spec. Rub. 256) (1914). — Lévêillé, Cat. Pl. Yun-Nan, 239 (1917). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 286 (1917).

*Rubus Cavalerici* Lévêillé & Vaniot in Bull. Soc. Bot. France, **51**: 218 (1904). — Lévêillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 22 (1909); Fl. Kouy-Tchéou, 357 (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 104 (Spec. Rub.) (1910); **19** (83): 34 (Spec. Rub. 258) (1914).

CHINA. K w e i c h o u : Pin-fa, bords des ruisseaux, *J. Cavalerie*,



no. 1125, July 10, 1903, "fl. blanches rosées" (holotype of *R. Cavaleriei*; photo. in A. A.).

*Rubus Cavaleriei* was first identified with *R. setchuenensis* by Cardot (l.c.) who also refers *R. clemens* Focke and *R. Schindleri* Focke to that species.

**Rubus Lyi** Léveillé in Fedde, Rep. Spec. Nov. **12**: 536 (1913); Fl. Kouy-Tchéou, 359 (1915).

CHINA. K w e i c h o u : Gan-chouen, *J. Cavalerie*, no. 3945 (holotype; photo. in A. A.).

This species seems closely related to *R. setchuenensis*, but the lobes of the leaves are almost triangular-ovate, acute or short-acuminate, more sharply serrate and lobulate, the under side is covered with a villous less close tomentum and only slightly reticulate, the petioles bear a few small prickles and the bracts are less deeply divided; the inflorescence does not differ except that it usually bears two small suborbicular leaves at the base and the flowers are slightly smaller.

**Rubus Feddei** Léveillé & Vaniot in Fedde, Rep. Spec. Nov. **8**: 549 (1910); Fl. Kouy-Tchéou, 358 (1915). — Focke in Bibl. Bot. **19** (83): 27 (Spec. Rub. 251) (1914). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 286 (1917).

CHINA. K w e i c h o u : Lo-fou, *J. Cavalerie*, no. 3576, March 1909 (holotype; photo. in A. A.).

By Focke this *Rubus* is referred to his Sect. *Elongati* on account of its large paniculate inflorescence, but Cardot (l.c.) prefers to place it in the Sect. *Moluccani* Ser. *Rufi* chiefly because of the presence of long pilose partly glandular hairs on the inflorescence, stems and petioles, and characterizes two of his new species of this series from Tonkin, *R. Lecomtei* and *R. polyadenus* (in Not. Syst. Paris, **3**: 302, 303), by comparison with *R. Feddei*.

**Rubus amphidasys** Focke in Bot. Jahrb. **29**: 396 (1901); in Bibl. Bot. **17** (72<sup>I</sup>): 108 (Spec. Rub.) (1910). — Handel-Mazzetti, Symb. Sin. **7**: 485 (1933).

*Rubus Chaffanjoni* Léveillé & Vaniot in Bull. Acad. Intern. Géog. Bot. **11**: 98 (1902); **12** (no. 160): f. 2 (1903). — Léveillé in op. cit. **20** (Mém.): 20 (1909); Fl. Kouy-Tchéou, 360 (1915); in Bull. Soc. Agr. Sci. Arts Sarthe, **45**: 219, fig. 5 (Pl. Util. Orn. Kouy-Tchéou, 45, fig. 5) (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 118 (Spec. Rub.) (1910); **19** (83): 34 (Spec. Rub. 258) (1914). — Cardot in Not. Syst. Paris, **3**: 290 (1917) sub *R. ourosepalus*; in Bull. Mus. Hist. Nat. Paris, **23**: 275 (1917).

CHINA. K w e i c h o u : environs de Kouy-yang, mont du Col-



lège, gorges Yang-pa, *J. Chaffanjon*, no. 240, June 1898 (holotype of *R. Chaffanjonii*; photo. in A. A.).

Cardot doubts the identity of *R. Chaffanjonii* with *R. amphidasys*, but I agree with Handel-Mazzetti that they are conspecific, which is also the opinion of Focke who erroneously makes in 1914 his species a synonym of *R. Chaffanjonii* having cited the date of publication of the letter as of 1899.

**Rubus hastifolius** Léveillé & Vaniot in Bull. Soc. Bot. France, **51**: 218 (1904). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 28 (1909); Fl. Kouy-Tchéou, 358 (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 107 (Spec. Rub.) (1910); **19** (83): 35 (Spec. Rub. 259) (1914). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 288 (1917).

CHINA. K w e i c h o u : Pin-fa, route de Tou-chan, *J. Cavalerie*, no. 1255, March 19, 1903, "fl. blanches" (holotype; photo. in A. A.).

This species is related to *R. flagelliflorus* Focke, but easily distinguished from all species of this group by its oblong-lanceolate subpanduriform leaves.

**Rubus sino-Sudrei** Léveillé in Bull. Acad. Intern. Géog. Bot. **24**: 251 (1914); Fl. Kouy-Tchéou, 360 (1915); Cat. Pl. Yun-Nan, 341, fig. 61 (1917).

CHINA. K w e i c h o u : enfoucement de Ouang-ly, *J. Esquirol*, no. 3506, March 1912, "couleur blanche" (holotype; photo. in A. A.).

Léveillé compares this species with *R. philyrinus* Focke to which it bears a close resemblance in habit and leaf-shape, but in that species the indumentum is tomentose-villous, while in *R. sino-Sudrei* the stem and the petioles are glabrous or nearly so and the under side of the leaves is closely tomentulose with appressed-pilose veins, and the teeth are terminated by a distinct conical gland.

**Rubus irenaeus** Focke in Bot. Jahrb. **29**: 394 (1901); in Bibl. Bot. **17** (72<sup>I</sup>): 114 (Spec. Rub.) (1910); **83**: 35 (Spec. Rub. 259) (1914). — Léveillé, Fl. Kouy-Tchéou, 360 (1915). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 289 (1917).

*Rubus Jamini* Léveillé & Vaniot in Bull. Acad. Intern. Géog. Bot. **11**: 102 (1902); **12** (no. 160): fig. 7 (1903). — Léveillé in op. cit. **20** (Mém.): 52 (1909); Fl. Kouy-Tchéou, 358 (1915). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 114 (Spec. Rub.) (1910).

CHINA. K w e i c h o u : environs de Kouy-yang, bois de Kien-lin-chan, *E. Bodinier*, no. 2368, June 10, 1898, "fl. jaunes" (holotype of *R. Jamini*; photo. in A. A.).

*Rubus Jamini* was first identified with *R. irenaeus* by Focke in 1914



and this identification was recorded by Lévêillé the following year (l.c. 360). The species is represented from Kweichou in this herbarium also by specimens collected by Y. Tsiang (nos. 4193, 5815).

**Rubus Buergeri** Miquel in Ann. Mus. Bot. Lugd.-Bat. **3**: 36 (Prol. Fl. Jap. 224) (1867). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 288 (1917). — Handel-Mazzetti, Symb. Sin. **7**: 497 (1933).

*Rubus Bodinieri* Lévêillé & Vaniot in Bull. Acad. Intern. Géog. Bot. **11**: 97 (1902); **12** (no. 160): t. 1 (1903). — Lévêillé in op. cit. **20** (Mém.): 58 (1909). — Lévêillé, Fl. Kouy-Tchéou, 357 (1915); in Bull. Soc. Agr. Sci. Arts Sarthe, **45**: 219, fig. 4 (Pl. Util. Orn. Kouy-Tchéou, 45, fig. 4) (1915). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 116 (Spec. Rub.) (1910). — Cardot in Not. Syst. Paris, **3**: 297 (1916), sub *R. dolichocladus*. — Handel-Mazzetti, Symb. Sin. **7**: 497 (1933), sub *R. dolichocladus* Cardot. — **Synon. nov.**

CHINA. K w e i c h o u : Mont du Collège, dans les herbes, *E. Bodinier*, July 20, 1898, "fl. blanches" (holotype of *R. Bodinieri*; photo. in A. A.).

It does not seem possible to separate *R. Bodinieri* by any reliable character from *R. Buergeri* except that the flowers, bracts and stipules are smaller and the calyx more closely pubescent. In the pubescence of the leaves it is near *R. Buergeri* var. *viridifolius* Handel-Mazzetti (l.c.) and perhaps referable to that variety. Specimens from Kweichou very similar to Bodinier's specimen are Y. Tsiang's nos. 5995 and 4412, the latter in fruit. Also Cardot in 1917 (l.c.) cites specimens of *R. Buergeri* from Kweichou.

**Rubus Blinii** Lévêillé in Fedde, Rep. Spec. Nov. **7**: 258 (1909); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 112 (1909); Fl. Kouy-Tchéou, 357 (1915). — Focke in Bibl. Bot. **19** (83): 35, 36 (Spec. Rub. 260) (1914).

CHINA. K w e i c h o u : Pin-fa, bois, *J. Cavalerie*, no. 3307, Nov. 1907, "fruits rouges" (holotype; photo. in A. A.).

This species which was compared by Lévêillé with his *R. Monguilloni* (= *R. fimbriifolius* Focke) is apparently most nearly related to *R. pacificus* Hance from which it chiefly differs in the spreading pilose pubescence of the calyx and in the exserted styles.

#### Subgen. IDAEOBATUS Focke

##### Sect. Corchorifolii Focke

**Rubus corchorifolius** Linné f., Suppl. 263 (1781). — Lévêillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 65, 125 (1909); Fl. Kouy-Tchéou, 358 (1915); Cat. Pl. Yun-Nan, 236 (1917). — Focke in Bibl.



Bot. **17** (72<sup>II</sup>): 131 (1911). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 289 (1917). — Nakai, Fl. Sylv. Kor. **7**: 55, t. 20 (1918).

*Rubus kerriifolius* Léveillé & Vaniot in Bull. Acad. Intern. Géog. Bot. **11**: 100 (1902). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 27 (1909).

*Rubus Vanioti* Léveillé in Fedde, Rep. Spec. Nov. **5**: 280 (1908); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 31 (1909).

CHINA. K w e i c h o u : environs de Kouy-yang, commun dans les montagnes, *E. Bodinier*, no. 2072<sup>bis</sup>, March 14, 1898, "donnant des baies excellentes, à goût de framboise" (holotype of *R. kerriifolius*; photo. in A. A.).

KOREA. Q u e l p a e r t : in sepibus prope Hong-no, *U. Faurie*, no. 1577, June 1907 (holotypes of *R. Vanioti*; isotype in A. A.).

*Rubus kerriifolius* and *R. Vanioti* were first identified with *R. corchorifolius* by Focke (l.c.), and his identification was accepted by Léveillé who cites the type of *R. kerriifolius* in 1915 under *R. corchorifolius*, though without quoting his name as a synonym, but in 1917 (l.c.) he cites it as a synonym of *R. corchorifolius*. In Herb. California University there is a specimen of Ducloux no. 639 from Yunnan labeled in Léveillé's handwriting *R. kerriifolius*.

**Rubus Fauriei** Léveillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, **40**: 60 (1905); in Fedde, Rep. Spec. Nov. **2**: 174 (1906); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 126 (1909). — Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 148 (1913). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 132 (Spec. Rub.) (1911). — Makino & Nemoto, Nippon-shokubutsu-sôran, ed. 2, p. 512 (1931).

JAPAN. H o n d o : Tottori, *U. Faurie*, no. 3172, May 22, 1899 (holotype; photo. in A. A.).

This is a distinct species with its large 3-lobed or sometimes undivided lobulate leaves and solitary large flowers on short lateral branchlets bearing one or two leaves.

**Rubus crataegifolius** Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. **2**: 98 (Enum. Pl. Chin. Bor. 24) (1833). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 39, 127 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 137 (Spec. Rub.) (1911). — Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 125 (1913). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 290 (1917). — Nakai, Fl. Sylv. Kor. **7**: 57, t. 21 (1918).

Koidzumi, Cardot and Nakai refer to *R. crataegifolius* without distinguishing varieties, the following species of Léveillé: *R. makinoensis*, *R. itoensis*, *R. ouensanensis* and *R. ampelophyllus*, but these species seem to differ sufficiently from typical *R. crataegifolius* as represented by



specimens from Hopei that at least the two following forms may be distinguished.

**Rubus crataegifolius** f. **Makinoensis** (Lévl. & Vant.) Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 125 (1913). — Makino & Tanaka, Man. Fl. Nippon, 254 (1929).

*Rubus Makinoensis* Léveillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, **40**: 60 (1905); in Fedde, Rep. Spec. Nov. **2**: 174 (1906). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 125 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 135 (1911); **19** (83): 36 (Spec. Rub. 260) (1914).

*Rubus ampelophyllus* Léveillé in Fedde, Rep. Spec. Nov. **5**: 279 (1908); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 49 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 135 (Spec. Rub.) (1911). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 290 (1917).

*Rubus erectifolius* Léveillé in litt. ex Nakai, Fl. Sylv. Kor. **7**: 57 (1918) pro synonym. *R. crataegifolii*.

*Rubus suberectifolius* Léveillé in litt. ex Nakai, l.c., pro synonym. *R. crataegifolii*.

*Rubus Wrightii* A. Gray var. *makinoensis* (Lévl. & Vant.) Koidzumi in Bot. Mag. Tokyo, **43**: 391 (1929). — Makino & Nemoto, Nippon-shokubutsu-sôran, ed. 2, p. 527 (1931), "*Makinoensis*."

*Rubus Wrightii* A. Gray var. *ampelophyllus* (Lévl.) Koidzumi l.c. (1929). — Makino & Nemoto, l.c. (1931).

JAPAN. H o n d o : circa Kopu, *U. Faurie*, no. 5369, July 1903 (holotype of *R. Makinoensis*; isotype in A. A.).

KOREA. Q u e l p a e r t : *U. Faurie* (holotype of *R. ampelophyllus*; ex Léveillé). K o g e n d o p r o v i n c e : in monte des diamants, *U. Faurie*, no. 302, June 1906 (in herb. Léveillé sub *R. ampelophyllus*; photo. in A. A.).

This form differs from typical *R. crataegifolius* in the large leaves pubescent on the veins beneath, in the larger flowers with narrower long-acuminate sepals, pilose outside and in the pubescent inflorescence; in *R. ampelophyllus* the pubescence is slighter, but otherwise it agrees with the type of *R. Makinoensis*. Léveillé describes the calyx of *R. ampelophyllus* as "extus . . . glabra" and so is the calyx of a detached flower in the pocket on the sheet of no. 302, but the flowers on the specimen itself have the same pubescence as *R. Makinoensis* but slighter.

**Rubus crataegifolius** f. **itoensis** (Lévl. & Vant.) Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 125 (1913). — Makino & Tanaka, Man. Fl. Nippon, 254 (1929).

? *Rubus crataegifolius* f. *minor* Kuntze, Meth. Spec. Rubus, 95 (1879). — Makino & Tanaka, l.c. (1929).

*Rubus itoensis* Léveillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe,



40: 62 (1905); in Fedde, Rep. Spec. Nov. 2: 175 (1906). — Focke in Bibl. Bot. 17 (72<sup>II</sup>): 135, fig. 57 (Spec. Rub.) (1911).

*Rubus ouensanensis* Léveillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, 40: 62 (1905); in Fedde, Rep. Spec. Nov. 2: 275 (1906); in Bull. Acad. Intern. Géog. Bot. 20 (Mém.): 67 (1909). — Focke in Bibl. Bot. 17 (72<sup>II</sup>): 137 (Spec. Rub.) (1911).

*Rubus Wrightii* A. Gray var. *ouensanensis* (Lévl. & Vant.) Koidzumi in Bot. Mag. Tokyo, 43: 391 (1929).

JAPAN. H o n d o : Kiushu, circa Takeo, *U. Faurie*, no. 5365, July 23, 1903 (holotype of *R. itoensis*; isotype in A. A.).

KOREA: Ouen-san, in collibus, *U. Faurie*, no. 33, July 1901 (holotype of *R. ouensanensis*; photo. in A. A.).

This form differs from the preceding in its much smaller leaves which resemble those of the following species, but the inflorescence and flowers are those of *R. crataegifolius*. *Rubus ouensanensis* is referred to *f. itoensis* with some doubt; it differs in the leaves being nearly glabrous and somewhat larger, in the very sparingly armed stem, and in the rather dense but evanescent pubescence of the calyx.

***Rubus incisus*** Thunberg, Fl. Jap. 217 (1784). — Léveillé & Vaniot in Bull. Acad. Intern. Géog. Bot. 20 (Mém.): 38, 128 (1909). — Focke in Bibl. Bot. 17 (72<sup>II</sup>): 138, fig. 58 (Spec. Rub.) (1911). — Cardot in Bull. Mus. Hist. Nat. Paris, 23: 291 (1917).

*Rubus Grossularia* Léveillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, 40: 61 (1905); in Fedde, Rep. Spec. Nov. 2: 175 (1906). — Léveillé in Bull. Acad. Intern. Géog. Bot. 20 (Mém.): 128 (1909).

*Rubus incisus* Thunb. *a proprius* subvar. *b. geifolius* (O. Ktze.) Koidzumi in Jour. Coll. Sci. Tokyo, 34 (art. 2): 122 (1913).

JAPAN. H o n d o : circa Kobe, *U. Faurie*, no. 5368, April 13, 1903 (holotype of *R. Grossularia*; isotype and photo. in A. A.).

*Rubus Grossularia* was first identified with *R. incisus* by Focke (l.c.). Koidzumi (l.c.) distinguishes under var. *proprius* the subvarieties *a. geifolius* and *b. euincisus* and refers *R. Grossularia* as a synonym to the first, but they seem to be too closely connected by intermediate forms to be kept distinct. The following variety is more distinct and usually easily separated by its much larger 3-lobed and often rather deeply 3-lobed leaves with acute or acuminate middle lobe.

***Rubus incisus*** Thunb. var. ***subcrataegifolius*** (Lévl. & Vant.), comb. nov.

*Rubus crataegifolius* Bunge var. *subcrataegifolius* Léveillé & Vaniot in Bull. Soc. Agr. Sci. Sarthe, 40: 61 (1905); in Fedde, Rep. Spec. Nov. 2: 174 (1906). — Focke in Bibl. Bot. 17 (72<sup>II</sup>): 137 (Spec. Rub.) (1911).



*Rubus subcrataegifolius* (Lévl. & Vant.) Lévillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 127 (1909).

*Rubus Koehneanus* Focke, op. cit. 140, fig. 60 (1911). — **Synon. nov.**

*Rubus incisus* Thunb.  $\alpha$  *proprius* subvar. *c. Koehneanus* (Focke) Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 122 (1913).

JAPAN. H o n d o : Jizogatake, *U. Faurie*, no. 5370, July 1903; Asama, *U. Faurie*, no. 6074, July 1904 (syntypes of *R. crataegifolius* var. *subcrataegifolius*; isotypes in A. A.).

Cardot (in Bull. Mus. Hist. Nat. Paris, **23**: 290) and Koidzumi (in Jour. Coll. Sci. Tokyo, **34** (art. 2): 125) refer *R. subcrataegifolius* as a synonym to *R. crataegifolius*; in its foliage it resembles somewhat its var. *itoensis*, but flowers and inflorescence are clearly those of *R. incisus*.

#### Section Leucanthi Focke

**Rubus Delavayi** Franchet, Pl. Delavay. 205 (1890). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 148 (Spec. Rub.) (1911). — Lévillé, Cat. Pl. Yun-Nan, 236 (1917). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 274 (1917).

*Rubus Duclouxii* Lévillé in Fedde, Rep. Spec. Nov. **6**: 111 (1908); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 80 (1909).

CHINA. Y u n n a n : mont Tchong-chan, *F. Ducloux*, no. 622, Aug. 1, 1906, "fl. blanches" (holotype of *R. Duclouxii*; photo. of the type, and of an isotype in Herb. Univ. Calif. in A. A.).

*Rubus Duclouxii* was referred as a synonym to *R. Delavayi* by Focke in 1911 (l.c.). Cardot (l.c.) refers this species to the subgen. *Cylactis*.

#### Sect. Rosaefolii

**Rubus alnifoliolatus** Lévillé in Bull. Soc. Bot. France, **53**: 549 (1906); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 77 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 152 (Spec. Rub.) (1911). — Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 150 (1913). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 294 (1917).

FORMOSA: in petrosis Kushaku, *U. Faurie*, no. 132, June 8, 1903 (holotype; photo. in A. A.).

Closely related to *R. fraxinifolius* Poir., but differing chiefly in its oblong, acute or obtusish, not acuminate leaflets.

**Rubus minusculus** Lévillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, **40**: 63 (1905). — Lévillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 129 (1909). — Focke in Bibl. Bot. **17** (72<sup>I</sup>): 29 (Spec. Rub.) (1910); **19** (83): 18, fig. 1 (Spec. Rub. 242, fig. 88) (1914). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 295 (1917).



*Rubus rosaefolius*  $\alpha$  *tropicus* l. *minor* Makino in Bot. Mag. Tokyo, **15**: 50 (1901). — Makino & Tanaka, Man. Fl. Nippon, 254 (1927). — Makino & Nemoto, Nippon-shokubutsu-sôran, ed. 2, p. 524 (1931).

*Rubus succedaneus* Nakai & Koidzumi in Bot. Mag. Tokyo, **25**: 260 (1911).

JAPAN. H o n d o : prope Nara, *U. Faurie*, no. 3187, May 16, 1899 (holotype; photo. in A. A.).

This species has been placed by Focke in the subgen. *Cylactis* on account of its diminutive stature, but I agree with Cardot, that it is more closely related to *R. rosaefolius* Sm. and may represent a depauperate form of it; as such it was described by Makino (l.c.). Makino & Nemoto in 1931 (l.c.) cite *R. minusculus* as a synonym of *R. rosaefolius*  $\alpha$  *tropicus* l. *minor*.

A variety, *R. minusculus* var. *yakusimensis*, was described by Masumune (Prel. Rep. Veg. Yak. 83. 1929), and later elevated to specific rank: *R. yakusimensis* Masumune in Mem. Fac. Sci. Agr. Taihoku Imp. Univ. Bot. **4**: 234 (1934).

**Rubus croceacanthus** Léveillé in Fedde, Rep. Spec. Nov. **11**: 33 (1912) "*croceacantha*." — Nakai, Rep. Veg. Quelpaert, 53 (1914); in Bot. Mag. Tokyo, **30**: 223 (1916); Fl. Sylv. Kor. **7**: 64, t. 24 (1918). — Mori, Enum. Pl. Corea, 204 (1922). — Koidzumi, Fl. Symb. Or. As. 65 (1930).

KOREA. Q u e l p a e r t : in sepibus et silvis Setchimeri, *E. Taquet*, nos. 5554, 5555, 5556, 5557, May 1911 (syntypes; photos. of 5554 and 5557 in A. A.).

This species seems closely related to *R. rosaefolius* Sm., but is easily distinguished by the gland-tipped setae on the branchlets, petioles and calyces. It may be only a variety of the latter. The two seem to be connected by intermediate forms, as two specimens from Kwangsi collected by Steward & Cheo show, one of them, no. 192, being rather densely stipitate-glandular, while the other, no. 338 from the same region, is nearly glabrous.

**Rubus marmoratus** Léveillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, **40**: 64 (1905); in Fedde, Rep. Spec. Nov. **2**: 275 (1906). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 131 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 156 (Spec. Rub.) (1911). — Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 150 (1913). — Makino & Nemoto, Nippon-shokubutsu-sôran, ed. 2, p. 517 (1931).

JAPAN. H o n d o : Jizogatake, *U. Faurie*, no. 5373, July 1903 (holotype; photo. in A. A.).



This species has been compared with *R. rosaefolius* Sm., but all the leaves except one are 3-foliate, the plant is glabrous and unarmed except a few minute prickles on the young branchlets and petioles, and there are 2–4 very young flower buds at the end of the not yet fully grown lateral branchlets.

***Rubus sumatranus*** Miquel, Fl. Ind. Bot. Suppl. 307 (1860–61). — Merrill in Contrib. Arnold Arb. 8: 70 (1934).

*Rubus myriadenus* Léveillé & Vaniot in Bull. Soc. Bot. France, 51: 218 (1904). — Léveillé in Bull. Acad. Intern. Géog. Bot. 20 (Mém.): 81 (1909). — Nakai in Bot. Mag. Tokyo, 30: 223 (1916); Fl. Sylv. Kor. 7: 62 t. 22, fig. c (1918). — Mori, Enum. Pl. Corea, 205 (1922).

*Rubus myriadenus* var. *grandifoliolatus* Léveillé in Fedde, Rep. Spec. Nov. 4: 334 (1907); in Bull. Acad. Intern. Géog. Bot. 20 (Mém.): 81 (1909).

*Rubus rosaefolius* Sm. subsp. *sumatranus* (Miq.) Focke in Bibl. Bot. 17 (72<sup>II</sup>): 155 (Spec. Rub.) (1911).

*Rubus asper* Focke in Bibl. Bot. 17 (72<sup>II</sup>): 157 (Spec. Rub.) (1911). — Léveillé, Fl. Kouy-Tchéou, 357 (1915). — Nakai in Bot. Mag. Tokyo, 30: 222 (1916); Fl. Sylv. Kor. 7: 61, t. 22, fig. a, b (1918). — Non D. Don.

*Rubus asper* var. (subspec. ?) *myriadenus* Focke in Bibl. Bot. 17 (72<sup>II</sup>): 158 (Spec. Rub.) (1911). — Léveillé, Cat. Pl. Yun-Nan, 236 (1917), as var.

*Rubus asper* var. (subspec. ?) *myriadenus* subvar. *grandifoliolatus* (Lévl.) Focke in Bibl. Bot. 17 (72<sup>II</sup>): 158 (Spec. Rub.) (1911).

CHINA. K w e i c h o u : Pin-fa, Youin-ou-chan, *J. Cavalerie*, no. 60, July 15, 1902, "fl. blanches" (holotype of *R. myriadenus*; photo. in A. A.); without locality, *J. Esquirol*, no. 460, May 1905 (holotype of *R. myriadenus* var. *grandifoliolatus*; photo. in A. A.); Kiao-ran, *J. Esquirol*, no. 354, April 3, 1905 (cited in Fl. Kouy-Tchéou sub *R. asper*).

Merrill has pointed out (l.c.) that the plant referred by recent authors to *R. asper* D. Don differs from that species markedly in the copious setose gland-tipped hairs up to 4 mm. long equalling the prickles in length, while *R. asper* has short scattered glandular-capitate hairs 1 mm. long or less, and he identifies the former with *R. sumatranus* Miq. Focke (l.c.) enumerates *R. sumatranus* as a subspecies of *R. rosaefolius* Sm. and apparently by mistake cites the name also as a synonym of *R. piri-folius* Sm. (op. cit. p. 64).

The orange yellow fruits are sweet and of good flavor according to a note on W. N. & C. M. Bangham's no. 1121 from Sumatra. According to Nakai the fruits of *R. myriadenus* are white and insipid.

*Rubus myriadenus* was referred as a synonym to *R. asper* by Léveillé



himself in 1914, but in 1917 he enumerates it as a variety of *R. asper*. Nakai in 1918 (l.c.) still maintained it as a distinct species, but cites in 1916 and 1918 two varietal manuscript names of Léveillé under *R. asper*, namely: "*R. myriadenus* v. *minor*, Lévl. in litt. fide Faurie. Nakai Veg. Isl. Wang. p. 8" and *R. myriadenus* var. *microcarpa*, Lévl. in litt. fide Taquet"; I have seen no specimens so named of either one.

It does not seem advisable to maintain *R. myriadenus* and its var. *grandifoliolatus* as varieties or even as forms. I can find no difference in the inflorescence, nor is the fruit of the type specimen of *R. myriadenus* elliptic, as Nakai describes the fruit of that species; var. *grandifoliolatus* differs only in the larger leaflets but grades imperceptibly into the more common smaller-leaved form, if one compares a large series of specimens of this widely distributed species.

**Rubus Thunbergii** Siebold & Zuccarini in Abh. Math. Phys. Kl. Akad. Muench. **4**: 246 (1844). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 158 (Spec. Rub.) (1911). — Nakai, Fl. Sylv. Kor. **7**: 63, t. 23 (1918).

*Rubus Argyi* Léveillé in Fedde, Rep. Spec. Nov. **4**: 333 (1907); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 105 (1909).

*Rubus talaikiaensis* Léveillé in Fedde, Rep. Spec. Nov. **4**: 334 (1907); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 105 (1909).

*Rubus stephanandria* Léveillé in Fedde, Rep. Spec. Nov. **8**: 358 (1910). — Focke in Bibl. Bot. **19** (83): 40 (Spec. Rub. 264) (1914).

*Rubus Thunbergii* var. *R. Argyi* (Lévl.) Focke in Bibl. Bot. **17** (72<sup>II</sup>): 160 (Spec. Rub.) (1911).

*Rubus Thunbergii* var. *R. talaikiensis* (Lévl.) Focke, l.c. (1911).

*Rubus Thunbergii* var. *Argyi* (Lévl.) Léveillé in Mem. Acad. Ci. Art. Barcelona, ser. 3, **12**: 560 (Cat. Pl. Kiang-Sou, 20) (1916).

*Rubus Thunbergii* var. *talaikiensis* (Lévl.) Léveillé, l.c. (1916).

*Rubus hirsutus* Thunberg, Diss. Bot.-Med. de Rubo, 7, 10 (1813), nom. dub. — Koidzumi in Bot. Mag. Tokyo, **39**: 306 (1925). — Nakai in Bot. Mag. Tokyo, **44**: 525 (1930).

*Rubus hirsutus* Thunb. var. *Argyi* (Lévl.) Nakai in Bot. Mag. Tokyo, **44**: 526 (1930).

KOREA. *Q u e l p a e r t* : \* in sylvis Hallaisan, alt. 500 m., *E. Taquet*, no. 2829, May, 1909; in sepibus Hogno, rara, *E. Taquet*, no. 2850, May 1909 (syntypes of *R. stephanandria*; isotypes in A. A.).

CHINA. *K i a n g s u* : montagnes Tchu-chan, Zuo-se, Song-kiang-fou, *d'Argy*, May [1846-66] (holotype of *R. Argyi*; photo. in A. A.); Souo-se, Talai-kiao, *d'Argy*, May [1846-66] (holotype of *R. talaikiaensis*; photo. in A. A.).

*Rubus Argyi* and *R. Talaikiaensis* were referred by Focke in 1911 as varieties to *R. Thunbergii*, but without varietal combinations which



were published by L  veill   in 1916. *Rubus stephanandria* was cited as a synonym of *R. hirsutus* Thunb. (*R. Thunbergii* Sieb. & Zucc.) by Nakai in 1930. In the same publication Nakai enumerates *R. eustephanos* Focke, *R. Argyi* and *R. talaikiaensis* L  vl. as synonyms of *R. hirsutus*, but his description "rami et folia glabra" certainly does not apply to the two L  veill   species.

I hesitate to follow Koidzumi and Nakai in adopting *Rubus hirsutus* Thunb. as the oldest name for *R. Thunbergii*. The description given by Thunberg "foliis pinnatis hirsutis, caule, inermi, petiolis aculeatis" is certainly inadequate and also misleading in so far as the species is placed together with *R. rosaefolius* and *R. niveus* under the group "foliis pinnatis" as contrasted with the preceding group "foliis quinatis." Though the name, *R. hirsutus*, apparently represents a new species, it does not figure under "Descriptio specierum novarum" where fuller descriptions of several new species are given. Nakai's discussion in 1930 seems to infer that Thunberg himself placed his *R. caesius* later with *R. hirsutus*, but in his Dissertatio (p. 10) he cites under the Japanese species *R. hirsutus* as well as *R. caesius*. That Thunberg's types of both these species which I have seen in Upsala, and of which I have photographs before me, belong to *R. Thunbergii* I have little doubt, though *R. hirsutus* is represented only by a sterile shoot with 5-foliolate leaves; *R. caesius* is well represented by flowering branches, which agree with *R. Thunbergii*. Neither Koidzumi nor Nakai mention *R. idaeus* Thunb. which is cited by Siebold & Zuccarini as a synonym of *R. Thunbergii*.

Whether *R. hirsutus* Thunb. is accepted or rejected, it will preclude the use of the later synonyms, *R. hirsutus* Wirtg. (1841) or *R. hirsutus* Wimm. (1857) for any of these species of the subgen. *Eubatus*.

***Rubus micranthus*** D. Don, Prodr. Fl. Nepal. 235 (1825). — Focke in Bibl. Bot. 17 (72<sup>II</sup>): 184, fig. 75 (1911). — L  veill  , Cat. Pl. Yun-Nan, 239 (1917).

*Rubus lasiocarpus* Sm. var. *micranthus* Hook. f., Fl. Brit. Ind. 2: 339 (1878). — Cardot in Bull. Mus. Hist. Nat. Paris, 23: 301 (1917).

*Rubus Pyi* L  veill   in Fedde, Rep. Spec. Nov. 6: 111 (1908); in Bull. Acad. Intern. G  og. Bot. 20 (M  m.): 72 (1909). — Focke in Bibl. Bot. 17 (72<sup>I</sup>): 30 (1910).

CHINA. Y u n n a n : Yun-nan-sen, vallons du Tchong-chan, F. Ducloux, no. 638, Apr. 20, 1904 (holotype of *R. Pyi*; isotype in Herb. Univ. Calif.; photo. in A. A.).

*Rubus Pyi* was identified with *R. micranthus* by Focke in 1911.

***Rubus tongchouanensis*** L  veill   in Fedde, Rep. Spec. Nov. 12: 283



(1913); Cat. Pl. Yun-Nan, 242 (1917). — Focke in Bibl. Bot. **19** (83): 264 (Spec. Rub. **3**: 488) (1914).

CHINA. Y u n n a n : haies, plaine de Tong-chouan, alt. 2500 m., E. E. Maire, June 1912, "épineux grimpant, fl. roses, fruits rouges" (holotype; photo. in A. A.).

This species is apparently closely related to *R. micranthus* Don and *R. niveus* Thunb., but is easily distinguished by its 5-foliolate leaves, those below the inflorescence 3-foliolate or even simple, by the ovate or elliptic-ovate acute to obtusish leaflets, the terminal rounded or subcordate at base and sometimes slightly 3-lobed, more finely and somewhat doubly serrulate, with very short often rounded mucronulate teeth, by the appressed-pubescent petioles and branchlets, and by the slender-peduncled inflorescences in the axils of the leaves. To this species also belongs no. 408 in herb. Bonati, collected by E. E. Maire, May 1905, without locality except "rochers"; this specimen is named *R. Pyi* Lévl. in Lévillé's handwriting, but agrees exactly with the type of *R. tongchouanensis*; it is not cited by Lévillé. Here also belongs Maire's specimen distributed by the Arnold Arboretum under no. 162 as *R. micranthus*; the label agrees with that of the type of *R. tongchouanensis* except that it reads "un peu buissonnant" instead of "grimpant" and "fruits rouges" is omitted; the sheet in this herbarium contains three branches, one of them representing *R. niveus* and two *R. tongchouanensis*, the latter approaching *R. micranthus* in the glabrous branches and the slightly coarser serration, one of the leaves being 7-foliolate. It also resembles *R. foliolosus* D. Don and may be a form with mostly quinate leaves and somewhat larger leaflets.

**Rubus coreanus** Miquel in Ann. Mus. Bot. Lugd.-Bat. **3**: 34 (Prol. Fl. Jap. 222) (1867). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 184 (Spec. Rub.) (1911). — Nakai in Bot. Mag. Tokyo, **30**: 226 (1916); Fl. Sylv. Kor. **7**: 71, t. 29 (1918). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 302 (1917).

*Rubus pseudosaxatilis* Lévillé in Fedde, Rep. Spec. Nov. **5**: 280 (1908); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 72 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 186 (Spec. Rub.) (1911).

*Rubus pseudosaxatilis* var. *Kouytchensis* Lévillé in Fedde, Rep. Spec. Nov. **5**: 280 (1908); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 72 (1909); Fl. Kouy-Tchéou, 358 (1915). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 186 (Spec. Rub.) (1911).

*Rubus quelpaertensis* Lévillé in Fedde, Rep. Spec. Nov. **5**: 280 (1908); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 72 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 186 (Spec. Rub.) (1911).

*Rubus coreanus* var. *Nakaianus* Lévillé in Fedde, Rep. Spec. Nov.



8: 358 (1910). — Focke in Bibl. Bot. 17 (72<sup>II</sup>): 221 (1911); 19 (83): 44 (Spec. Rub. 268) (1914).

*Rubus Hoatiensis* Léveillé in Fedde, Rep. Spec. Nov. 11: 32 (1912). — Focke in Bibl. Bot. 19 (83): 44 (Spec. Rub. 268) (1914).

*Rubus Nakaianus* Lévl. in litt. fide Taquet ex Nakai in Bot. Mag. Tokyo, 30: 226 (1916), pro synonym. *R. coreani*.

KOREA. Q u e l p a e r t : *U. Faurie*, no. 1587, June 1907 (holotype of *R. pseudosaxatilis*; photo. in A. A.); in dumosis, *U. Faurie*, nos. 1584, 1585, June and July, 1907, "tarde flores et fructus emitit [*sic*], fructibus demum nigris" (syntypes of *R. quelpaertensis*; photo. in A. A.); in sylvis Hallaisan, 600 m., *E. Taquet*, nos. 2834, 2835, 2845 (syntypes of *R. coreanus* var. *Nakaianus*; isotypes in A. A.); Hoatien, *E. Taquet*, no. 5567, May 1911 (holotype of *R. Hoatiensis*; photo. in A. A.).

CHINA. K w e i c h o u : Pin-fa, *J. Cavalerie*, no. 1256, May 3, 1902, "fl. roses-rouges" (holotype of *R. pseudosaxatilis* var. *Kouytchensis*; photo. in A. A.).

*Rubus quelpaertensis* and *R. pseudosaxatilis* were appended without comment to *R. coreanus* by Focke in 1911 and *R. Hoatiensis* was inserted after *R. opulifolius* Bertol. in 1914. By Nakai in 1916 and 1918 they were cited as synonyms of *R. coreanus*. Cardot mentions only *R. quelpaertensis* as a synonym of *R. coreanus*. *Rubus Hoatiensis* apparently represents a rather extreme form with all the leaves trifoliate except a single uppermost leaf which is simple and 3-lobed; it further differs in the large, in one branch paniculate inflorescence and in the aculeolate calyx, and may possibly represent a distinct variety.

The type specimens of *R. coreanus* var. *Nakaianus* are labeled in Léveillé's handwriting "*Rubus Nakaianus*."

***Rubus parvifolius*** Linnaeus, Sp. Pl. 1197 (1753), excl. syn. cit. — Merrill in Trans. Am. Philos. Soc. n. ser., 24: 181 (Comm. Lour. Fl. Coch. in.) (1935).

*Rubus triphyllus* Thunberg, Fl. Jap. 215 (1784). — Focke in Bibl. Bot. 17 (72<sup>II</sup>): 187 (Spec. Rub.) (1911).

*Rubus Taquetii* Léveillé in Fedde, Rep. Spec. Nov. 7: 340 (1909). —

**Synon. nov.**

*Rubus triphyllus* Thunb. var. *Taquetii* (Lévl.) Nakai in Bot. Mag. Tokyo, 30: 227 (1916); Fl. Sylv. Kor. 7: 74, t. 32 (1918).

KOREA. Q u e l p a e r t : in sepibus, 600 m., *E. Taquet*, no. 765, May 12, 1908 (holotype of *R. Taquetii*; isotype in A. A.).

Nakai keeps *R. Taquetii* as a distinct variety on account of its smaller leaves and the densely prickly inflorescence. He cites under his variety also Taquet's nos. 2832, 2834, 2844, 4223 and 4225, but of these only



no. 2832 has the inflorescence as prickly as Taquet no. 765. Focke does not mention *R. Taquetii* at all. According to a note on the type specimen Koidzumi identified it as *R. parvifolius* L. forma.

**Rubus schizostylus** Lévillé in Fedde, Rep. Spec. Nov. **5**: 280 (1908). — Lévillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 83 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 207, fig. 83 (Spec. Rub. 2) (1911). — Nakai, Fl. Kor. **2**: 476 (1911); Fl. Sylv. Kor. **7**: 72, t. 30 (1918). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 303 (1917).

KOREA. Q u e l p a e r t : *U. Faurie*, no. 1590, July 1907 (holotype; photo. in A. A.).

The plant figured by Nakai differs from the type in having part of the leaves 5-foliolate and the leaflets ovate to elliptic and acute, not suborbicular and rounded at the apex; the drawing is probably based on Faurie's no. 1586, cited by Cardot with the remark that it differs from the type in having almost all the leaves 5-foliolate and pubescent only on the veins beneath. Focke's figure represents a photograph of the type specimen.

**Rubus illudens** Lévillé in Fedde, Rep. Spec. Nov. **12**: 283 (1913); Cat. Pl. Yun-Nan, 239 (1917). — Focke in Bibl. Bot. **19** (83): 264 (Spec. Rub. 488) (1914).

CHINA. Y u n n a n : vallées des montagnes derrière Tong-tchouan, alt. 2600 m., *E. E. Maire*, June, "fl. roses, fruits rouges" (holotype; photo. in A. A.).

Lévillé compares this species with *R. opulifolius* Bertol., but from that species it is readily distinguished by the glabrous branches, the ovate acuminate leaflets and the corymbose inflorescence. In the shape of the leaflets it resembles much *R. teledapos* Focke, but that species has a racemose inflorescence and partly 5-foliolate leaves. It is apparently nearest to *R. pedunculatus* D. Don, but differs in the glabrous slightly bloomy branches and in the more compact inflorescence, and much smaller flowers with the sepals about 4 mm. long. It might also be compared with *R. mesogaeus* Focke, but that species has pubescent branches, much larger leaves and white flowers.

**Rubus foliolosus** D. Don, Prodr. Fl. Nepal. 256 (1825). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 191 (Spec. Rub.) (1911). — Lévillé, Cat. Pl. Yun-Nan, 239 (1917). — Handel-Mazzetti, Symb. Sin. **7**: 505 (1933).

*Rubus Bonatii* Lévillé in Fedde, Rep. Spec. Nov. **7**: 338 (1909).

*Rubus Mairei* Lévillé in Fedde, Rep. Spec. Nov. **12**: 283 (1913); non Lévillé (1912). — Focke in Bibl. Bot. **19** (83): 263 (Spec. Rub. 487) (1914).



*Rubus Boudieri* Léveillé in Fedde, Rep. Spec. Nov. **12**: 534 (1913); Cat. Pl. Yun-Nan, 236 (1917).

*Rubus longistylus* Léveillé in Fedde, Rep. Spec. Nov. **12**: 534 (1913); Fl. Kouy-Tchéou, 359 (1915). — **Synon. nov.**

CHINA. K w e i c h o u : Chouang-chan-po, *J. Esquirol*, no. 3144, May 1911, "fl. blanche" (holotype of *R. longistylus*; photo. in A. A.). — Y u n n a n : without locality, "partout," *E. E. Maire*, March 1904, herb. Bonati no. 405 sub nom. *R. Mairei* (holotype of *R. Bonatii* in herb. Bonati; photo. in A. A.); plaine de Tong-tchouan, haies des tertres, alt. 2500 m., *E. E. Maire*, April [1912?], "fl. et fruits roses" (in herb. Léveillé sub *R. Bonatii*; photo. in A. A.); haies de la plaine à Tong-tchouan, *E. E. Maire*, May 1912, "fl. rouges, fruits jaunes" (holotype of *R. Mairei* (1913) and *R. Boudieri*; photo. in A. A.); haies, plaine de La-kou, alt. 2400 m., *E. E. Maire*, May, "fl. roses, fr. roses" (sub *R. Boudieri* in herb. Léveillé; photo. in A. A.).

*Rubus Bonatii* and *R. Boudieri* were first identified with *R. foliolosus* by Handel-Mazzetti in 1933. The only specimen agreeing in citation and description with the type of *R. Bonatii* is in herb. Bonati, now in herb. Univ. Calif., but it is labeled in Léveillé's handwriting *R. Mairei*, while the specimen labeled *R. Bonatii* by Léveillé in his herbarium is not cited with the description. On the label of the type of *R. longistylus* the color of the flowers is given as white, but the specimen is in young fruit and the color note may refer to the whitish tomentum of the fruits.

**Rubus adenochlamys** (Focke) Focke in Bibl. Bot. **17** (72<sup>II</sup>): 191 (Spec. Rub.) (1911). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 303 (1917).

*Rubus Kinashii* var. *coreensis* Léveillé & Vaniot in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 80 (1909).

KOREA: no specimen cited.

Léveillé & Vaniot do not cite a specimen, but Cardot (l.c.) refers Faurie no. 1580 from Quelpaert to *R. adenochlamys*.

**Rubus innominatus** S. Moore var. **Kuntzeanus** (Hemsl.) Bailey, Gent. Herb. **1**: 30 (1920).

*Rubus Kuntzeanus* Hemsley in Jour. Linn. Soc. Bot. **23**: 232 (1887). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 195 (Spec. Rub.) (1911). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 304 (1917).

*Rubus xanthacantha* Léveillé in Fedde, Rep. Spec. Nov. **4**: 333 (1907). — Léveillé & Vaniot in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 99 (1909).

*Rubus Kuntzeanus* var. *xanthacantha* (Lévl.) Léveillé, Fl. Kouy-Tchéou, 360 (1915).

CHINA. K w e i c h o u : Pin-fa, *J. Cavalerie*, no. 2402, July 5,



1905, "fruits jaunes bons à manger" (holotype of *R. xanthacantha*; photo. in A. A.).

*Rubus xanthacantha* was first referred to *R. Kuntzeanus* by Focke in 1911 (l.c.). Lévillé four years later published it as a variety of that species. Cardot remarks that it differs from typical *R. Kuntzeanus* in the glandular calyx and forms a transition to his *R. Kuntzeanus* var. *glandulosus* (in Not. Syst. Paris, **3**: 311. 1917). That variety is very close to typical *R. innominatus* S. Moore and differs only in the consistently three-foliolate leaves. Bailey (l.c.), however, states that the type specimen of Moore's species at herb. Kew shows only ternate leaves and proposes for the form with predominately five-foliolate leaves the name *R. innominatus* var. *quinatus*.

**Rubus pinfaensis** Lévillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, **39**: 320 (Bouquet Fl. Chine, 5) (1904); in Fedde, Rep. Spec. Nov. **6**: 374 (1909). — Lévillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 106 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 199, fig. 81 (1911); in Sargent, Pl. Wilson. **1**: 55 (1911). — Lévillé, Fl. Kouy-Tchéou, 359 (1915). — Handel-Mazzetti, Symb. Sin. **7**: 50 (1933).

*Rubus fasciculatus* Duthie in Ann. Bot. Gard. Calcutta, **9**: 39, pl. 48 (1901). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 306 (1917). — Non P. J. Mueller (1858).

CHINA. K w e i c h o u : Pin-fa, route de Tou-chan, *J. Cavalerie*, no. 920, March 19, 1903 (holotype of *R. pinfaensis*; photo. in A. A.); environs de Kouy-yang, mont du Collège, *J. Chaffanjon*, no. 2057, Feb. 1898; grotte de Thong-thang, *J. Esquirol*, no. 2609, Feb. 25, 1911 (both cited in Fl. Kouy-Tchéou).

This is a well-marked species closely related to *R. ellipticus* Sm. It has been collected in Kweichou also by Y. Tsiang (nos. 5009 and 7794), by several collectors in Hupeh, Szechuan, Yunnan and northeastern Tibet; outside of China in the N.W. Himalaya, and according to Cardot in Formosa.

**Rubus mesogaëus** Focke in Bot. Jahrb. **29**: 399 (1901); in Bibl. Bot. **17** (72<sup>II</sup>): 204 (Spec. Rub.) (1911).

*Rubus Kinashii* Lévillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, **40**: 66 (1905); in Fedde, Rep. Spec. Nov. **2**: 175 (1906); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 80 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 188, fig. 76 (Spec. Rub.) (1911). — Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 138 (1913). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 308 (1917). — **Synon. nov.**

*Rubus eous* Focke in Bibl. Bot. **17** (72<sup>II</sup>): 204 (Spec. Rub.) (1911).

*Rubus euleucus* Focke ex Handel-Mazzetti, Symb. Sin. **7**: 503 (1933), quoad syn. *R. Kinashii*.



JAPAN. H o n d o : Asama-yama, *U. Faurie*, no. 6072, July 1904 (holotype of *R. Kinashii*; photo. in A. A.).

*Rubus Kinashii* is placed by Focke in Ser. Nivei, but Cardot (l.c.) states that it is closely related to *R. mesogaeus* Focke, a species of Ser. Euidaei. After comparing copious material of both species, I have come to the conclusion that it is not only closely related, but identical with *R. mesogaeus*. I do not even find that the slight differences Cardot points out can be used to distinguish the Chinese and the Japanese plants. I agree with Koidzumi (l.c.) that *R. eous* is a synonym of *R. Kinashii* and consequently of *R. mesogaeus*.

**Rubus kanayamensis** Léveillé & Vaniot in Bull. Soc. Bot. France, **53**: 549 (1906). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 130 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 205 (1911). — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 309 (1917). — Makino & Tanaka, Man. Fl. Nippon, 253 (1927). — Makino & Nemoto, Nippon-shokubutsu-sôran, ed. 2, p. 515 (1931).

*Rubus strigosus* Michx. var. *kanayamensis* (Lévl. & Vant.) Koidzumi, Fl. Symb. Or.-As. 56 (1930).

JAPAN. H o k k a i d o : forêts de Kanayama, *U. Faurie*, no. 6688, July 1905 (holotype; isotype in A. A.).

According to Focke this species is nearest to *R. idaeus* var. *strigosus* (Michx.), but differs in the glabrous under side of the leaves and the looser inflorescence.

**Rubus idaeus** L. var. **Yabei** (Lévl. & Vant.) Koidzumi in Bot. Mag. Tokyo, **43**: 389 (1929). — Makino & Nemoto, Nippon-shokubutsu-sôran, ed. 2, p. 515 (1931).

*Rubus Yabei* Léveillé & Vaniot in Bull. Soc. Agr. Arts Sarthe, **40**: 65 (1905); in Fedde, Rep. Spec. Nov. **2**: 275 (1906). — Léveillé in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 133 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 210 (Spec. Rub.) (1911). — Koidzumi in Bot. Mag. Tokyo, **30**: 78 (1916).

*Rubus nipponicus* (Focke) Koidzumi, Fl. Symb. Or.-As. 57 (1930), quoad syn. *R. Yabei*.

JAPAN. H o n d o : Jizogatake, *U. Faurie*, no. 5374, July 1903 (holotype; isotype in A. A.).

*Rubus Yabei* differs from *R. idaeus* var. *nipponicus* Focke in the sharply and doubly serrate leaves with acuminate mucronate teeth and a thin grayish white tomentum beneath, in the glabrous inflorescence with slender pedicels 1–1.5 cm. long and in the calyx being glabrous outside. *Faurie* no. 6685 mentioned by Cardot (in Bull. Mus. Hist. Nat. Paris, **23**: 310. 1917) under *R. idaeus* is referable to this variety,



but differs in the mostly 5-foliolate leaves and in the pedicels and calyx outside being appressed pubescent; also the isotype in this herbarium of *R. Yabei* has the leaves mostly 5-foliolate, but otherwise agrees with the type of which there are two specimens in the herb. Lévillé.

***Rubus idaeus* L. var. *Matsumuranus*** (Lévl. & Vant.) Koidzumi in Jour. Coll. Sci. Tokyo, **34** (art. 2): 135 (Consp. Ros. Jap.) (1913), "subsp. *melanolasius* Focke α M.". — Nakai in Bot. Mag. Tokyo, **30**: 229 (Praecurs. Fl. Sylv. Cor.) (1916). — Makino & Nemoto, Nippon-shokubutsu-sôran, ed. 2, p. 515 (1931).

*Rubus strigosus* Michx. ex Koidzumi, Fl. Symb. Or.-As. 55 (1930), quoad pl. japonicam.

*Rubus Idaeus* L. β *strigosus* (Michx.) Maximowicz in Bull. Acad. Sci. St. Pétersb. **17**: 161 (in Mém. Biol. **8**: 394) (1872), quoad pl. japonicam.

*Rubus Matsumuranus* Lévillé & Vaniot in Bull. Soc. Agr. Sci. Arts Sarthe, **40**: 66 (1905); in Fedde, Rep. Spec. Nov. **2**: 176 (1906); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 131 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 208 (Spec. Rub.) (1911).

JAPAN. H o n d o : in sylvis Ochiai, *U. Faurie*, no. 6071, Sept. 1904 (holotype of *R. Matsumuranus*; photo. in A. A.).

From *R. idaeus* var. *strigosus* to which it seems nearest, it differs in the densely puberulous stems and petioles, in the large simply serrate leaflets, the terminal one cordate or subcordate. This apparently represents the raspberry of Hondo and Hokkaido usually referred to *R. strigosus*; the latter probably does not occur in its typical form in Japan. From subsp. *nipponicus* Focke which it resembles in general aspect, var. *Matsumuranus* differs chiefly in the densely bristly and glandular-hirsute branches and inflorescences. To var. *Matsumuranus* belongs possibly *R. sachalinensis* var. *macrophyllus* Cardot (in Not. Syst. Herb. Mus. Paris, **3**: 315. 1917) based on *Faurie* no. 3122 which I have not seen.

***Rubus idaeus* var. *diamantinus*** (Lévl.), comb. nov.

*Rubus diamantinus* Lévillé in Fedde, Rep. Spec. Nov. **5**: 279 (1908); in Bull. Acad. Intern. Géog. Bot. **20** (Mém.): 77 (1909). — Focke in Bibl. Bot. **17** (72<sup>II</sup>): 210 (Spec. Rub.) (1911). — Nakai in Jour. Coll. Sci. Tokyo, **31**: 476 (Fl. Kor. II) (1911), sphalmate "*diamanticus*." — Cardot in Bull. Mus. Hist. Nat. Paris, **23**: 311 (1917). — Koidzumi, Fl. Symb. Or.-As. 57 (1930).

*Rubus idaeus* var. *microphyllus* Turcz. ex Nakai in Bot. Mag. Tokyo, **30**: 228 (Praecurs. Fl. Sylv. Cor.) (1916); Fl. Sylv. Kor. **7**: 76 (1918), quoad syn. *R. diamantiacus*; vix Turczaninov.

KOREA. K o g e n d o p r o v. : in petrosis montis des diamants, 1000 m., rara, *U. Faurie*, no. 301, June 24, 1906 (holotype of *R. diamantinus*; photo. in A. A.).



*Rubus diamantinus* differs from the preceding and the following varieties chiefly in the small leaflets densely pubescent on the upper surface, otherwise it seems nearest to the following variety and may perhaps be referred to it as a form. Nakai referred *R. diamantinus* as a synonym to *R. idaeus* var. *microphyllus* Turczaninov in Bull. Soc. Nat. Moscou, 16: 682 (Fl. Baical.-Dahur. 1: 370) (1843), but var. *microphyllus* dates back to Wallroth, Sched. Crit. 226 (1822) and applies apparently to a low small-leaved European form of *R. idaeus* subsp. *vulgatus* Focke and not to a form related to subsp. *strigosus*.

***Rubus idaeus* var. *aculeatissimus*** Regel & Tiling, Fl. Ajan. 87 (1858).

*Rubus sachalinensis* Lévillé in Fedde, Rep. Spec. Nov. 6: 332 (1909); in Bull. Acad. Intern. Géog. Bot. 20 (Mém.): 134 (1909). — Cardot in Bull. Mus. Hist. Nat. Paris, 23: 310 (1917). — **Synon. nov.**

*Rubus idaeus* subsp. *sachalinensis* (Lévl.) Focke in Bibl. Bot. 17 (72<sup>II</sup>): 210 (Spec. Rub.) (1911). — Koidzumi in Jour. Coll. Sci. Tokyo, 34 (art. 2): 136 (1913). — Makino & Nemoto, Nippon-shokubutsu-sôran, ed. 2, p. 515 (1931). — Hultén in Svensk Vet. Akad. Handl. 8 (no. 1): 54, 188, map 499 (Fl. Kamtch.) (1929); (no. 2): 254 (1931).

*Rubus melanolasius* Focke var. *discolor* Komarov ex Miyabe & Miyake, Fl. Saghal. 129 (1915).

*Rubus strigosus* Michx. ex Koidzumi, Fl. Symb. Or.-As. 55 (1930), quoad syn. *R. sachalinensis*.

SAGHALIN: in silvis Korsakof, *U. Faurie*, nos. 565, 566, July 30, Sept. 30, 1908; in herbis Vladimirof, no. 597, July 1908; in montibus Takinosawa, no. 567, July 24, 1908; without special locality, no. 598, pro parte, July 1908 (syntypes of *R. sachalinensis*; isotypes of 565, 566 and 567 and photo. of 598 in A. A.).

Focke already suggested the identity of *R. sachalinensis* with *R. idaeus* var. *aculeatissimus* by citing the latter name as a synonym of his *R. idaeus* subsp. *sachalinensis* attributing it to C. A. Mey. in herb.; he apparently was not aware that the name was published by Regel & Tiling in 1858 and should take precedence over his new combination. Also Cardot (l.c.) refers to this identification and Hultén (l.c. p. 55) remarks that the two are probably identical.

Faurie no. 598 which is cited above pro parte, has four branches on the type sheet; the two lower branches belong here, while the two upper branches, one with two immature flower buds, suggest *R. kanayamensis* on account of their glabrous leaves but the branches and petioles are very sparingly armed and the inflorescence is practically unarmed.

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